

### **REMARKS/ARGUMENTS**

Reconsideration and allowance in view of the following remarks are respectfully requested.

Claims 1, 3, 10-11, 17, 19-20, 22, 29-30 and 35-38 were rejected under 35 USC 103(a) as being unpatentable over Isozumi et al in view of Verlag. Applicant respectfully traverses this rejection.

The arguments presented October 6, 2008 are incorporated herein by reference. In response to those arguments, on pages 7-8 of the Office Action, the Examiner has asserted that:

"Concerning Verlag, in order to have *a minimum pressure loss*, the skilled artisan would understand the borehole of which Verlag speaks to be the entire borehole passage through the nozzle body through which the fluid flows. The total cross-section of the filter boreholes is larger than all cross-sections of the borehole passage through which the fluid flows (which would mean that all tubular passageway cross-sections are smaller than the total filter apertures). *Otherwise, the filter having a total aperture open area smaller than any flow cross-section through the nozzle would NOT minimize the pressure loss.* (The skilled artisan seeking to minimize the pressure loss across the filter would not have the total flow aperture area of the filter to be smaller than any flow area through the nozzle – since such would INCREASE PRESSURE LOSS)." (Emphasis added).

However, as previously argued, the machine nozzle (tauchüsenkopf) as a through hole in Verlag is irrelevant to the claimed tubular fluid passage, which is defined between the filter section and the inner surface of the housing. There is no logical relation between the borehole passage and the tubular passageway. Obviously, the Examiner's response to arguments is based on improper hindsight.

For the reasons advanced in the October 6, 2008 Response and for the further reasons offered in rebuttal above, reconsideration and withdrawal of the Examiner's rejection based on Isozumi and Verlag are respectfully requested.

Claims 1-3, 10-11, 17-22, 29-30 and 35-38 were also rejected under 35 USC 103(a) as being unpatentable over JP '316 in view of GB '571. Again, the arguments presented October 6, 2008 are incorporated herein by reference. In response to that argument, on page 8 of the Examiner's Office Action, the Examiner has asserted that:

"Concerning '571, the filter is positioned within the fuel duct, as explained in e.g. the abstract, page 11 and the claims of the reference. Contrary to Applicant's remarks, nothing is found on page 11 of the reference that indicates that "the fuel duct corresponds to the jet orifice 64". However, it is clear that the filter is positioned within a cylindrical fuel duct (see e.g. figures 4 and 5) and the entire orifice cross-section of all orifices disposed in the filter element is larger than or equal to the cross-section of the fuel duct-which would require the tubular passage cross-sections to be smaller than the total cross-sections of all the orifices." (Emphasis added).

The present argument is based on the previously cited last paragraph on page 11 of GB '571:

"In the case of all of the illustrated exemplified embodiments the entire orifice cross-section of all orifices disposed in the filter elements is larger or equal to the cross-section of the fuel duct. The filter is placed in the fuel duct of an injector." (Emphasis added).

According to the specification, the fuel duct is added with a reference numeral 51. In FIG. 5, the fuel duct 51 is not a tubular passage but a circular hole.

In addition, according to the description at page 2, second paragraph,

"... fuel, which is to be filtered, is forced, as it passes through the filter, through narrow gaps which are formed between the profiled outer periphery of the filter body and the wall of the fuel duct surrounding it". (Emphasis added).

That is, GB '571 uses the wording narrow gaps distinctively from the fuel duct, which is the circular hole surrounding the filter. Thus, the Examiner's association between the tubular passage and the fuel duct is farfetched and illogical and the response to arguments is based on improper hindsight.

Claim 1 of GB '571 defines the primary technical feature that :

"a plurality of orifices which have an orifice cross-section which is smaller than that of each jet orifice in the injection nozzle".

The above claim definition can produce the effect of capturing minute foreign matter and prevent such foreign matter from clogging the jet orifices (injection nozzles) of the nozzle. The feature of thoroughly capturing foreign matter by defining the small orifices (filter holes) teaches throttling fuel flow primarily through the filter holes rather than the jet orifice, and teaches the cross sections of the orifices (filter holes) to be a dominant factor of the fuel flow. That teaching is contrary to the structure claimed by Applicant. That is, in GB '571, when the cross sections of the filter holes varies, the flow amount of fuel through the filter varies greatly.

Thus, the primary technical feature of GB '571 teaches away from the claimed feature of the present invention, which is to throttle fuel flow not through the filter holes but through the tubular passage.

In addition, GB '571 fails to mention the effect of regulating pressure drop throughout the filter by precisely manufacturing simply the outer diameter of the filter section and the inner diameter of the fluid inlet port. Therefore, GB '571 is irrelevant to

the technical idea of the present invention and does not constitute a basis for a proper obviousness rejection.

Claims 4-8 and 23-28 were rejected under 35 USC 103(a) as being unpatentable over either of Isozumi in view of Verlag or JP '316 in view of GB '571 and further in view of Neuman.

These claims are submitted to be patentable over the primary prior art combinations for the reasons advanced above. The Examiner's further reliance on Neuman does not overcome the deficiencies of the primary combinations.

It is further respectfully submitted that these claims are patentable over the applied art in their own right. In this regard, with regard to the Isozumi/Verlag combination, as noted above, Isozumi specifically teaches a mesh type filter with square filter openings. Even though Neuman teaches shaped filter openings, Neuman does not teach or suggest and the skilled artisan would not appreciate how the square filter mesh openings of Isozumi could be modified to correspond to the Neuman configurations.

More specifically, because Isozumi provides a square filter mesh for his filter and teaches in great detail the criticality of the size of the square filter mesh holes, it is respectfully submitted that it would not have been obvious to the skilled artisan to abandon Isozumi's invention and provide instead the shaped bores taught by Neuman. The Neuman shaped bores are not provided as a mesh, are not square in shape, and there is certainly no teaching in Neuman of how shaped bores could be provided in a simple mesh of the type Isozumi discloses. It is therefore respectfully submitted that the skilled artisan would not modify Isozumi taken alone or in combination with XP '379 in view of Neuman.

With regard to the Examiner's proposed modification of JP '316, it is respectfully noted that the filter of JP '316 is a filter tube formed from porous silica. Even though

Neuman teaches shaped filter openings in a metal walled filter, this does not provide a teaching relevant to a filter formed from porous silica. Neuman does not teach or suggest how the pores of the JP '316 filter could be shaped and it is respectfully submitted that they cannot in fact be shaped as taught by Neuman. Because Neuman relates to an entirely different type of filter structure than the porous silica filter structure of JP '316, it is respectfully submitted that the skilled artisan would never combine the prior art in the manner the Examiner has suggested, much less produce the claimed invention from that combination.

For all the reasons advanced above, reconsideration and withdrawal of the rejection of claims 4-8 and 23-28 is requested.

Claims 2, 18, 21, 23 and 26 have been rejected under 35 USC 103(a) as being unpatentable over Isozumi in view of Verlag and further in view of Stamstad. Applicant respectfully traverses this rejection.

Stamstad discloses a filter having a hemispherically-shaped closed end defining the fluid passage. However, Stamstad fails to teach or describe the relationship between the cross-sectional area of the tubular area and the summation of the cross-sectional area of the holes in a filter section. Therefore, Stamstad does not overcome the deficiencies of the primary combination and these claims should be allowable for the same reasons.

Claims 24-25 and 28 have been rejected under 35 USC 103(a) as being unpatentable over JP '316 in view of GB '571 and further in view of JP '209. Applicant respectfully traverses this rejection.

The Examiner has suggested that it would have been obvious to arrange the pores of JP '316 as a helical line of pores in a substantially regular interval. As noted above, JP '316 relates to a filter formed from porous silica. JP '209 does not teach or suggest how the pores of a porous silica material can be disposed in a regular helical

line as in JP '209. Indeed, it is respectfully submitted that there is no basis whatsoever for modifying JP '316 in view of JP '209 and perhaps more importantly, the applied art does not teach or suggest how a porous silica filter material could be modified in the way the Examiner has proposed. It is therefore respectfully submitted that the Examiner's proposed prior art combination is improper. It is further respectfully submitted that even if the pores of the porous silica could be arranged in the manner the Examiner suggests, the resulting combination would still not teach or suggest the invention claimed because the relationship between the tubular passage and the holes of the filter, as defined in applicant's independent claims, would still not be taught or suggested for the reasons established above.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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